

Hobbies

WEEKLY

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HOW THE HANDYMAN CAN MAKE A CHILD'S COT

HERE is a very useful article to make for the home, one that does not need a lot of wood and is quite within the scope of the woodworker. These cots are still rather expensive to purchase and it is really worth while to make one for oneself or a friend, ready when the need arises. Hardwood, like oak and beech, are good woods to employ in construction, but a

serviceable article can be made from good quality deal, as it can be stained to look like a better wood afterwards.

The Metal Fittings

Some ready-made fittings can be bought now, such as are necessary for the drop side of the cot, but will be touched on at the end of the article, then readers can choose for themselves whether to purchase them, or make do with the

substitutes mentioned, which can be fixed up at home.

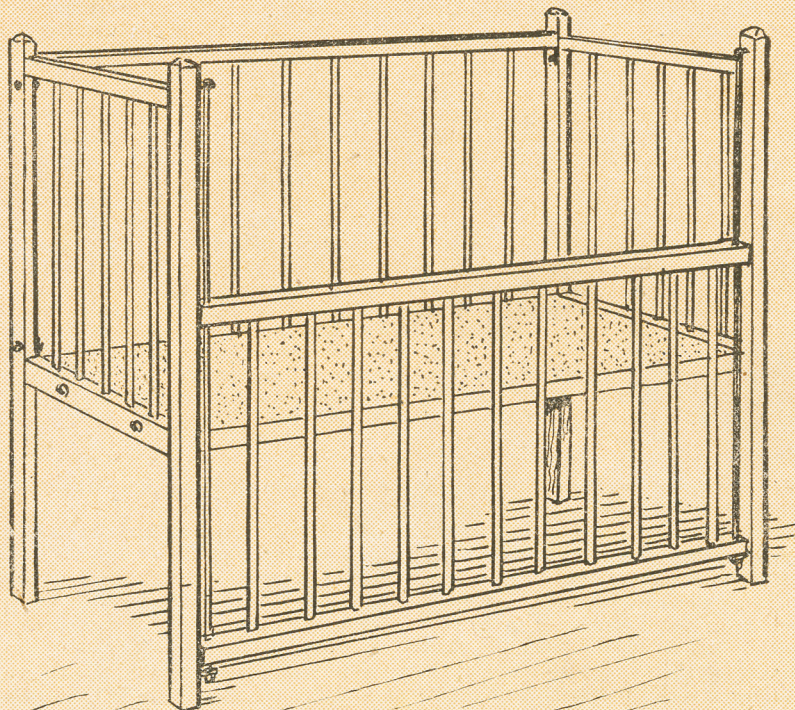
The two ends of the cot are made up first. Fig. 1 shows how these are put together. The legs are of $1\frac{1}{2}$ in. square wood, the rails $1\frac{1}{2}$ in. by $1\frac{1}{2}$ in., and the dowel rods, joining the rails, $\frac{3}{8}$ in. diameter or $\frac{1}{2}$ in. if a stronger article is desired.

The rails are tenoned into the legs, as at (A), the tenons being 1 in. long, and not going right through the legs. Make these a close fit, and set the mortises in the centre so that the rails also lie central, leaving $\frac{1}{8}$ in. of leg each side of the rails. The tops of the legs are shaped up as at (B).

Rail Spacing

The dowel rails are spaced at 4 in. centres, so it is only necessary to divide the rails into which they fit, into 4 in. spaces. Bore the holes for these dowel rails right through. Fit the horizontal rails in the legs, but do not glue them in yet awhile. Place the dowel rod rails, all cut to the same length, in the top rail and let them rest on the holes in the bottom rail. With a pot of thin hot glue ready, take the rails in turn, glue about 1 in. of the bottom end of each and glue the top ends, sticking out above the rails. Then press each in position, and with a rag, moistened in hot water, wipe off any glue squeezed out. Leave until the glue is set hard.

The rails can now be removed from the legs, and a shaving taken off the top rail to level off any bits of the dowel rails that may be sticking up. Finish off this part by gluing a $\frac{1}{2}$ in. by 1 in. strip of wood over to hide the ends of the rods. This strip looks neater if its edges are bevelled off, as shown at (C) in Fig. 3. The rails can



now be glued into the legs, and the joints pressed well home.

A home-made mattress can be put together with $1\frac{1}{2}$ in. by $1\frac{1}{2}$ in. wood, to the dimensions given in Fig. 2. A strip across the centre is nailed in, to relieve the strain of webbing. This frame is fixed across the legs with iron bolts,

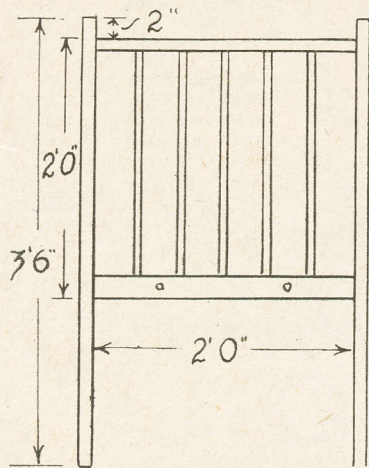


Fig. 1—View and details of one end

suitable holes being bored for them in rails and ends of mattress frame.

The frame is then webbed, two strands lengthwise and four across, the webbing being strained taut and tacked to the top edges. Over the webbing a covering of strong canvas is also tacked. A soft overlay is laid upon this, of course, a suitable one being easily purchased, as the cot is designed a standard size.

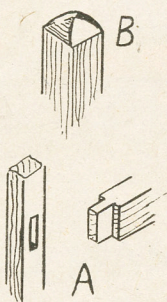
The Sides

The sides of the cot comprise two horizontal rails, connected together with the dowel rods before mentioned sizes of timber as for the ends. Dimensions of the sides are given at Fig. 3. The dowel rails are fixed at 4 in. centres just the same as the ends of the cot. The side which will be the rear and fixed side of the cot, as distinct from the drop side, is provided with a metal bracket at each end of the horizontal rails. These can be just the common furniture brackets, the 2 in. size, such as can be bought at hardware shops.

Screw these to the ends of the rails, as at (D) and saw about $\frac{3}{4}$ in. off the arms, which will be attached to the legs of the cot. Reamer out the screw hole, as may be necessary, to fit a $\frac{1}{4}$ in. iron bolt. Now

fit the side across to the legs, holes for the bolts being naturally bored in the legs for the purpose. Fit them for the rail, the top one, to be 2 ins. down from the tops of the legs.

To fit the drop side, a pair of steel rods will be required, 39 ins. long, of $\frac{1}{4}$ in. to $\frac{3}{8}$ in. diameter. These are threaded at top



and bottom for a nut. The rods are held in screw eyes, driven in the legs at top and bottom. Arrange these for the side, when fitted on the rods, to rise level with the end rails. If a line 2 ins. down from the top is drawn across each of the front legs, the top screw eye should be driven in just above it.

Fit the rod in with a nut, as at Fig. 4 (enlarged at E), and drive the lower screw in at just the height up from the floor to allow room for the nut to secure it. Holes for the rods are bored in the rails at each end, so that they can slide up and down on them.

Side Fittings

To keep the drop side up, when the cot is in use, a cheap cupboard bolt can be fixed each end. Readers who may prefer to buy the fittings ready-made, will find that the fixing is an easy enough matter.

The fittings usually comprise a pair of metal rods, with brackets for screwing them to the legs fixed on. Four sliding

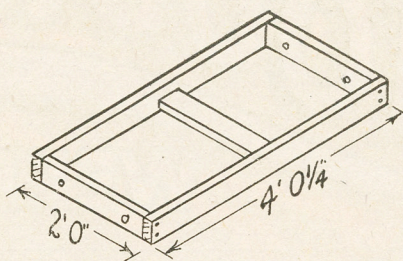


Fig. 2—Home-made mattress frame

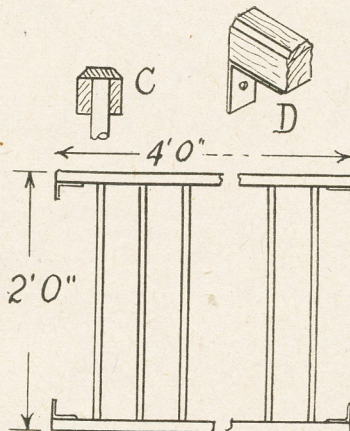


Fig. 3—Rail and fitting for sides

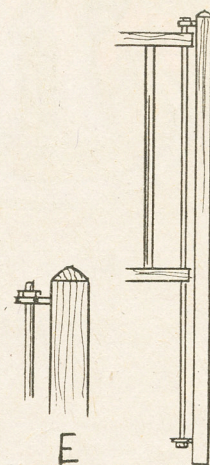


Fig. 4—Side locking detail

A spring mattress may now be available and those readers who may wish to employ one, in place of the wood frame already mentioned, will find that the fixing is quite an easy matter. Lugs are cast on the metal frame of the spring, and

suitable cast brackets to fit them are supplied with the mattress. The brackets are screwed to the ends of the cot.

It will be wise here to purchase these (if desired, of course) first and amend the length of the cot sides, if necessary, to fit across. Probably little amendment will be required, as these fittings are mostly of standard size.

It will be seen that the cot is easily taken to pieces for storage or travel, by simply taking out the retaining bolts. The woodwork will look best if nicely stained oak or walnut colour, and given a coat of clear varnish. Alternatively a coat of enamel can be given, but this will be a much longer job.

Earthing a Set

I HAVE built a portable 3-valve receiver, and am using an eliminator. The set works without an aerial or earth, but I have read that mains operated sets need an earth for safety reasons, etc. As my eliminator runs off the mains, does this mean my set will have to have an earth? (R.G.—Carlton).

AS the voltage delivered by an eliminator for a battery set is not

high compared with that present in mains receivers, there should be no danger. But with any apparatus connected to the mains, it is unwise to touch bare leads or connections.

If your eliminator is of the type where one mains lead is connected to the H.T. minus output point, there is some danger of shocks, but this cannot be avoided as such eliminators must not be used with receivers which are earthed,

as this would earth one side of the mains supply.

If, however, the eliminator has a high tension mains transformer incorporated, the mains supply is then isolated, and an earth can be used on the receiver, which would remove possibility of shocks when touching the accumulator leads, or similar points wired to H.T. minus. The possibility of shocks from H.T. positive connexions must always remain.

Bright colouring and a quaint picture make a novel TABLE MAT HOLDER

As can be seen from the illustration, this table mat holder gives a nice touch of colour and humour to any sideboard. When the mats are removed, the horse and rider show up against a sky-blue background. One does not have to be a skilled artist to make the drawing.

Apart from the fact that there is more fun in doing a grotesque horse and jockey, any discrepancies in designing that the non-artist reader may make will not be noticed as they would in an attempt at an accurate rendering of a horse.

Before starting on the actual rack or holder, the mats themselves should be made or obtained. Sets of these, in cork or a rubber compound can be obtained at the stores, or the reader can cut them from sheet cork, etc. They can also be cut from waterproof plywood.

Matter of Size

Sizes vary; in fact some sets consist of two or three sizes. Some are circular but others are square or oblong with the corners cut off. Such straight-line edge mats will be easier for the reader to cut, assuming he is making his own mats.

The present design is intended for mats 6ins. in diameter but will take mats up to 8ins. If large mats are used the design could, with advantage, be enlarged. This is very easily done by making the squares $1\frac{1}{2}$ ins. or $1\frac{1}{4}$ ins. instead of the usual 1in.

Get all the mats together, as this will enable you to get the depth of the holder. All the mats should just go in without having too tight or too loose a fit.

The pattern should be first drawn on paper ruled in 1in. (or larger) squares. There are actually two pieces, though for economy in space, they are shown superimposed.

One consists of the background (sky). This starts from the bottom left corner and goes straight

up, as shown by arrow (Q), and right round the top and down the other side. The other piece consists of the horse and rider plus a strip of grass. This starts from the bottom left corner, but immediately turns round, as in arrow (P).

It is as well to get point (Z) (in the arm-pit) and with this as a centre, describe part of a circle, 6ins. diameter (the diameter of your mats, presumably). This will enable you to spot points (X) and (Y), the purpose of which will be explained shortly.

Note that the 'grass' is thicker near the horse's hooves. This is to provide extra material at this otherwise weak spot. The wood, even if plywood, might break across here if left too thin.

Now transfer the design to the wood. Plywood is necessary and of, say, $\frac{3}{16}$ in. thickness, though a $\frac{1}{2}$ in. piece would do quite well for the back. Have the outside grain of the plywood going vertically for the front piece. Of course, only the outline of the front piece is cut. The other details are painted on afterwards.

The Base

The base is a piece of solid wood, $\frac{3}{8}$ in. thick, 6ins. long, and of suitable width to take the set of mats, as already explained. The front and the back are screwed strongly to this base as nails might easily pull out under a strain. Before assembling, however, paint the back of the front piece with eggshell black, just as cut-out calendars are painted and paint the face of the back piece sky blue. Clean off any 'whiskers' from the wood before any painting is attempted.

Small holes are made at points (X) and (Y) and nails driven right through.

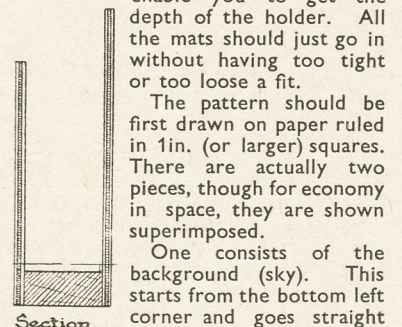


These nails will be slightly above the floor level and prevent the circular mats from rolling out. For straight-edged mats, however, these nails are not necessary. The ends of the nails are, of course, cut off flush, and the punched-in heads filled with plastic wood.

Colouring

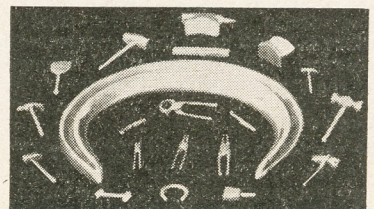
The horse and jockey are painted with bright enamels, doing a bit at a time to avoid the colours running one into another. You can please yourself about colours, but the following is a suggestion: horse, light brown; saddle, etc., dark brown; jockey's boots (lower part) and horse's hooves, black; jockey's breeches, yellow; his shirt, red with white spots; his cap, red; the grass, green with white or yellow spots for daisies, etc. The face and hands are, of course, pink.

As a finishing touch, the model may have a piece of felt or baize glued firmly to the underside.



A Miniature Set of Farrier's Tools

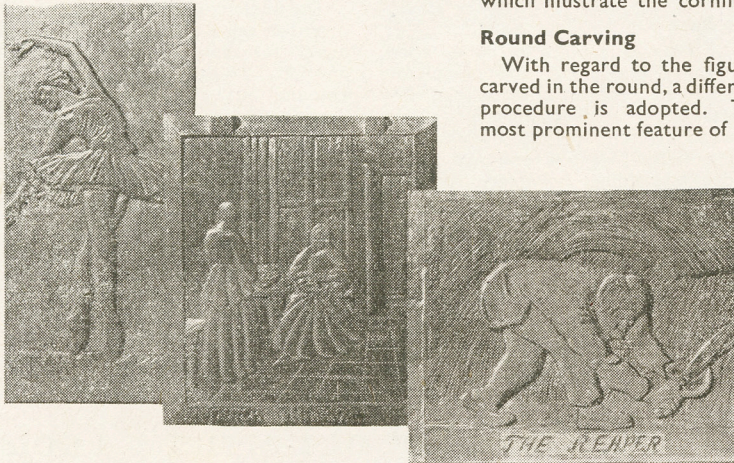
THIS amazing set of 20 tiny tools necessary for making and fixing a horse's shoe was made by a 48-year old craftsman—Mr. E. Boole of 27 Raiton Rd., Brixton, S.E.24. The tools are only about 1 in. long, but correct in shape and proportion to each other. And they were made from silver paper used in cigarette packets. Melting the paper was tricky because the container has to be white hot, so if it is not satisfactory the bottom drops out and the valuable contents are lost! The perfect little tools were made by hand, in 12 months, and were sent to us in an old pocket watch case—which will give you some idea of their size. The larger horseshoe took about 600 pieces of silver paper. Mr. Boole was naturally interested in horses, because he served 21 years in the Cavalry, and took up the hobby when on service in India. If you know anyone interested, Mr. Boole is prepared to sell this novel set.



Practical hints from a reader who became interested in CARVING IN WOOD

The photograph here illustrates what can be done by any amateur who is interested in carving. The reader who sent them, Mr. E. Peachey of Leicester, was entirely self-taught and uses any odd pieces of wood to hand. Those results shown here are in mahogany, pear-wood, box-wood and deal, and thinking some instructions on the subject would be of interest to other readers who might like to take up the hobby, we asked Mr. Peachey to explain the process for their benefit. Here is what he tells you.—

I HAVE been indulging in Wood-carving as a hobby for very many years, teaching myself from books from public libraries, and gaining experience with practise. With regard to the reliefs, if you are good at drawing you should never be at a loss for a design. Unfortunately, my free-hand drawing is not very good, and I am inclined to slip up on proportion. I take my ideas from black and white illustrations, woodcuts, embroidery patterns



and newspaper photographs; the Ballet Dancer in relief is a result of the latter.

Measure your photograph for size on a piece of wood approximately $\frac{3}{4}$ in. thick—cut down if necessary, smooth surface with fine glasspaper and clean. Place a sheet of carbon paper on the surface, then the design, and pin down with drawing pins. Trace the detail of the pattern, and then detach. Go over the whole design with a tracer chisel, marking out each item, then carve round the design with a firmer chisel, taking away the background with a gouge.

Procedure

Be careful to gouge away from figure or figures, by resting your hand on the centre piece and turning the wood round as you progress—level off and start on the design. The prominent parts must be

left in high relief, whereas the drapery, etc., that recedes into the background, may be cut away with a gouge, the shape of which is the most suitable to show the features in question to the best advantage.

In the case of the Dancer, the drapery is very much in the foreground and is the determining note in this relief. Every ripple of the skirt gives emphasis—brings out the light and shade, and a background of V chisel cuts shows the figure at even greater advantage. A smooth surface is left where the flood-light strikes the figure, with V chisel marks for the shadow.

The same principle is used for the Dutch Interior. The voluminous skirts of the occupants of the room are brought out to advantage by the tiles on the floor, which are illustrated by V chisel marks. Again in The Reaper the figure is thrown out by the incisions which illustrate the cornfield.

Round Carving

With regard to the figures carved in the round, a different procedure is adopted. The most prominent feature of the

The spectacled face was really an experiment to find out exactly how far one can go with boxwood, which is a fine close-grained wood and I recom-



mend this wood if obtainable. The seated figure is common deal, a good, cheap and soft wood to experiment with, but not suitable for a lasting piece of wood-sculpture.

The lettering is a quotation from Omar Khayyam—"Tis all a chequer-board of nights and days" (it has not come out very well in the photograph) and has a checker-board background to grooved lettering.

Subjects to Attempt

In conclusion I should like to say the majority of woodcarving has been determined by ecclesiastical and ancient subjects, and although these are very colourful, I prefer to portray something entirely different. Should this meet the eye of an interested reader who, unlike myself, excels in drawing and design, just consider how well Verdi's quartette from Rigoletto would appear on a relief—the hunchback with hand upraised invoking rage and vengeance, the slight form of Gilda's with restraining hand, the Duke whose amorous braggadocio would come out so well, and the coquetish sister of the brigand, with head thrown back in a characteristic manner—truly a variety of expression.

In this short article I have only dwelt on the examples of my work shown in these photographs, but there is a vast field to cover in woodcarving.

*The Editor
wishes all his
readers a Happy
New Year*

Full size patterns on page 223 help in making this ACROBAT TOY

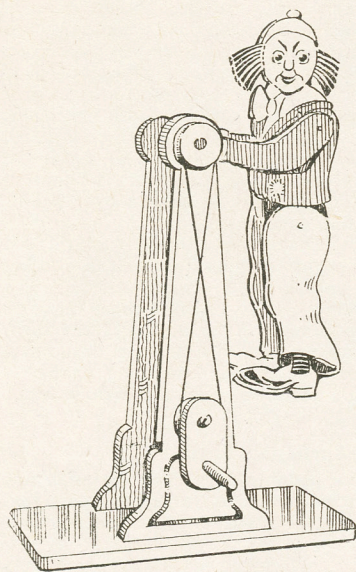


Fig. 1—The toy in action

WE believe the toy given here this week will meet with approval by all our workers, young and old alike. There is nothing like a working toy to amuse the youngsters, and here is one that is simple to make and paint, and just the thing to give away as a birthday or a Christmas gift. Of course, we must at the outset say that there is much in the actual painting and finish of a toy such as this to attract attention. Plenty of time and patience must be expended if it is to be a first-class toy.

Full Patterns

The fretworker should delight in making it, as the various parts are simple in outline. And, what is more, we have been able to give full-size patterns of all the most important parts. Looking at Fig. 1 we see the completed toy in action, and note that the figure of the clown clutches a horizontal bar which revolves between two uprights.

At one end of the horizontal bar there is fixed a pulley wheel round which passes an elastic or string belt and continues to another pulley further

down. On this second pulley is glued a crank and handle so by turning it, the horizontal bar is brought into motion and in turn carries over the figure which performs all kinds of curious antics in his circular travels.

The Base and Uprights

Commence the work of making the toy by outlining the base shown in Fig. 2. All measurements are given here including those for setting out the two mortises to take the uprights. The base, be it noted, is made sufficiently wide to allow of the left-hand fingers of the operator to hold it rigidly in place while the figure is in motion and the crank in action.

Wood $\frac{1}{4}$ in. thick will do for the base and for the uprights also. Round off the corners of the base piece and clean the two surfaces with glasspaper. Now make the uprights, the pattern for one of these being given at (B) on the pattern sheet.

If the worker does not wish to destroy his copy of *Hobbies* by cutting the sheet and sticking the paper down, he might prefer to make a simple outline tracing of the upright and either stick this down to the wood or transfer the outline with carbon paper. The second upright is made by drawing round the cut-out one after the latter has been cleaned with fine glasspaper. Check the length of the tenons on the uprights with the mortises in the base before actually cutting them so as to ensure a tight fit. Then apply the glue to the tenons and press them in place.

Figure Parts

The five separate parts of the figure, shown full-size on the pattern page, are next cut. Here again the parts may be traced and stuck to or transferred to the wood, leaving the patterns as a guide for colouring, and for future use. Wood $\frac{3}{16}$ in. must be used for the figure and the rough edges after cutting should be carefully cleaned. Note carefully the pivoting holes on the patterns, as much depends on the proper working of the parts for their true placing.

The arms and legs are pivoted to the body by means of short lengths of stout wire threaded through the holes and bent up neatly on the outsides. The

painting of the figure should be done before the parts are connected up, for sake of convenience in handling. A piece of $\frac{3}{16}$ in. diameter rod will now be wanted, cut to the length given at (F) on the pattern sheet.

To one end of this is glued a disc of $\frac{3}{16}$ in. or $\frac{1}{4}$ in. wood as (C) on the pattern sheet, and in the detail, Fig. 3. Pass the rod through one of the uprights and then thread on the hands of the figure, using a touch of glue here to fix them securely to the rod.

Pulley Wheel

Then, on the outer end of the rod, glue on a pulley—D on the pattern sheet. An ordinary $\frac{1}{4}$ in. disc of wood is used and the deep groove round it cut in with a rat-tail file. Or a vee groove can be made with a triangular file as desired. The rod must work quite freely but not loosely in the holes of the uprights.

Another pulley is now made similar to that shown at (D) but with a smaller hole in its centre to admit the passage of

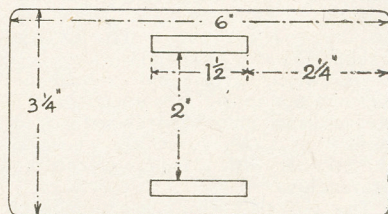


Fig. 2—Details of the base

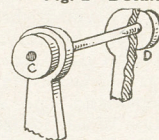


Fig. 3—Disc and spindle

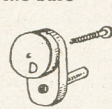


Fig. 4—Handle arrangements

a long round-head screw. To this pulley is glued the crank (E) made up of the piece shown in the pattern sheet with a piece of $\frac{3}{16}$ in. rod put through as a handle. Fig. 4 shows the complete unit ready to screw loosely to the upright.

A disc of wood should be cut and glued to the inside of the upright to receive the end of the screw which should not be less than $\frac{3}{16}$ in. long with round-head.

Assembly

It only remains now to clean certain parts of the toy and to connect up the pulley of the working figure with that below with a belt as previously suggested. The picture of the finished toy gives ample suggestion for painting in bright colours with markings, features, etc., in black or dark brown. Poster paint or ordinary paint can be used, care being taken that it does not run into holes or pivot points to affect the mechanism of turning.

How not to use a Fretsaw!

WHAT things our readers do get up to, for sure! And how they do use a fretsaw! One of our young friends tells me his delight in his work and an incident when he first used his fret-frame. 'I was', he says 'idly sawing away at a piece of wood, practising cutting straight lines and curves when I found, to my horror, I had fretted a not-so-neat

pattern in the kitchen table top! Now my grandmother's table has strange glued lines running around one corner, holding the thing together'. Just shows you what a Hobbies fretsaw blade can cut, doesn't it. I must not tell you the reader's name, in case his grandmother also is a follower of our pages!

The Editor

The first of two helpful articles on HOME UPHOLSTERY

MANY readers will find that a knowledge of upholstery is a useful thing, especially when a worn piece of furniture requires attention.

Such articles as chairs and music stools, can be attempted, however, even by the tyro, if he follows the instructions given below carefully, and experience will be gained which will be helpful when tackling bigger articles.

The easiest upholstery job is a chair of the springless type and this is a safe article to commence on. For the work a few simple tools are required, a strainer for tightening the webbing, a long double-eyed upholsterer's needle, and a curved needle. These, with the common household hammer and pincers, will be all that is needed for a start.

The Strainer

The strainer can be made at home. It is sketched in Fig. 1, and is a piece of hardwood, some $\frac{3}{4}$ in. or more in thickness, cut to the shape shown in the diagram. At some 3 ins. from the pointed end cut out a slot for the webbing, $2\frac{1}{2}$ ins. long and $\frac{1}{2}$ in. wide.

The width of the slot should be widened out to $\frac{3}{4}$ in. underneath, and a wedge-shaped piece of hardwood shaped to fit it, as at (A). Attach the wedge to the strainer with a length of cord to prevent loss.

The springless chairs are usually of two types, fixed or loose seats. The instructions apply equally well to both. First strip off all the old upholstery, as none of it can be replaced satisfactorily, unless it is the stuffing. The latter can be teased out with the fingers and will serve, with the addition of a little fresh material, for restuffing. Knock out all the old tacks, dust off, and all is ready for re-webbing, the first part of the job.

Strands Number

The number of strands required will depend somewhat on the size of the seat, usually two from back to front, and two or three across, will be sufficient. This webbing takes all the weight of the sitter, so it must be strained as taut as possible. This is where the home-made strainer becomes of importance. Proceed as follows.

Tack the webbing to the frame with three tacks, leaving enough webbing, say, $\frac{3}{4}$ in. from the tacks for doubling over. Double this over the tacks and drive in two more through the double thickness. Poke the webbing through the slot in the strainer, slip the wedge in—this will prevent the webbing slipping out under stress.

Now place the strainer, with its sharpened end against the chair edge, at the angle shown in Fig. 2, and press it downwards to tighten the webbing as much as possible. Keep it tight, while

tacking the first three tacks. Then cut off at $\frac{3}{4}$ in. away from the tacks, double over and tack again.

Repeat this for every strand, remembering to interweave the cross strands, as at Fig. 3. If you have tightened the webbing fully, it should yield little on pressure of the hands. The seat is now covered with a single layer of canvas, on which the stuffing material is to be laid. Use a good quality material here, at least a fairly close woven kind, that will stand some wear. As it is hidden from view, a strong sacking material might serve. But it must be strong.

The Canvas

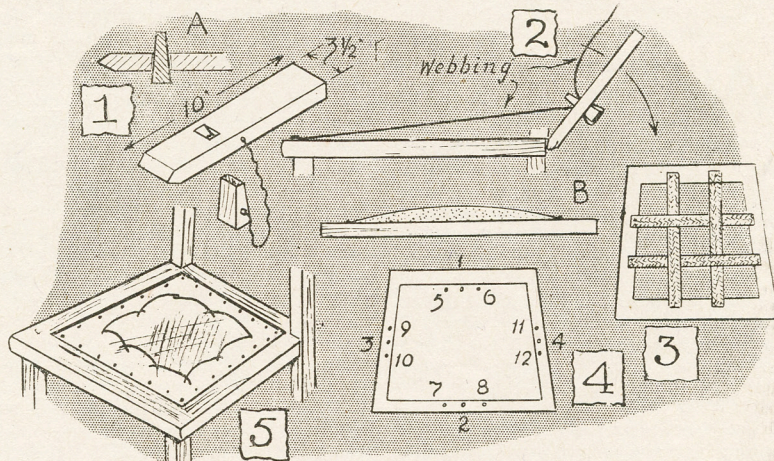
The canvas must be cut large enough to allow a $\frac{3}{4}$ in. all round to be doubled over, otherwise the strain of tightening it may cause it to break away from the tacks. The tightening must be done with the fingers, the webbing strainer being useless for this part. To get an

The stuffing material should then be pushed in handfuls under the loops, and when enough has been so treated, a further quantity should be spread over the whole and pressed to a shapely curve, as at (B), Fig. 4, with the hand. Over this the undercovering, if used, should be carefully tacked, or if no undercovering is employed, a sheet of cotton wool should be laid over before the final covering.

The cotton wool helps to level out any slight irregularities in the stuffing and makes for a smoother seat. The undercovering is usually a cheap calico or other similar material, but as the term 'cheap' is now distinctly a misnomer, unless the reader has some handy, it would be as well, perhaps, to do without it.

For Springless Seats

The padding or stuffing material, not mentioned before, for a springless seat should, for preference, be horsehair. It



equal tension all over the seat, adopt the following method, referring to Fig. 4.

Drive a tack at (1), pull tight as possible and tack at (2), then at (3), pull tight and tack at (4). Now repeat this in the order shown, (5) and (6), (7) and (8), and so on, and continue until only the corners are left. The result should be a covering as tight almost as a drum, and creaseless. This method should also be followed when covering the stuffing with the upholstery material.

Needle and Twine

Now, with the upholstery needle, and some strong twine, sew a series of loops over the canvas covering. The object of these is to retain the stuffing in its place when repeatedly sat upon. Keep all the loops at a uniform slackness, a piece of wood poked between the canvas and twine, when making each loop, will help here. Arrange the loops at about the position shown in Fig. 5.

has a springy quality, not possessed by other stuffing substances, and helps the seat to retain its shape. If not available or too expensive, then a good quality flock may be employed. The cotton wool (this is inexpensive) should be used over flock if at all possible.

The final covering material should be cut roughly to the size required, and be tacked on as already described. The surplus should be trimmed off close to the tacks with a sharp knife. Cover the tacks with a banding or gimp. Banding, which can usually be bought to match the material, is employed for American cloth, Rexine, and such-like stuffs. Tacks are not used for fastening it down, they would look unsightly, instead the fancy brass or copper chair nails are substituted.

Covering with tapestry, velvet, and similar material, a gimp is used to bind with.

(To be Continued)

A number of valuable small points to remember in RADIO CONSTRUCTION

It appears that many wireless constructors would welcome guidance on a number of small points which often arise when a receiver is built, and which may not be described in detail because space does not permit this. Therefore beginners, in particular, should find the following details helpful, no matter what kind of amplifier or receiver they are constructing.

Valveholder Mounting

Valveholders are either of the type intended to screw on a baseboard, and have sockets and terminals on top, or the type where the sockets project below.

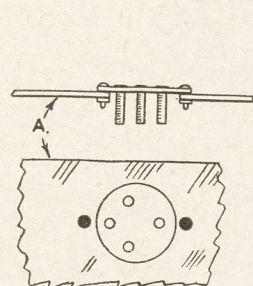


Fig. 1—Mounting components on baseboard and chassis

The latter type will normally be mounted on a chassis, as shown at (A) in Fig. 1. The valve will be inserted from the top and all wiring will be underneath. This arrangement proves more tidy and convenient in larger receivers.

The chassis may be of metal or plywood. A hole sufficiently large to clear the valveholder sockets is necessary. (This will usually be 1 in. or so in diameter, depending upon the type of holder). Such holes may be cut with a suitable fretsaw, but a hole or washer-cutter is better. This has a small blade which can be set to any radius and it is used in an ordinary brace.

Metal Chassis

With a metal chassis it is essential there be a reasonable clearance between the metal and all holder sockets and tags. It is best to mount the holder on top of the chassis if the latter is made from plywood, otherwise the valve pins may not fit properly into the sockets.

Baseboard type holders should be secured by means of round-headed screws, as shown at (B). This also applies to small fixed condensers and other parts with bakelite or moulded bases. If countersunk-headed screws are used, as shown at (C), the holder will quite probably be broken when the screw is driven tight.

Valves and holders are made so they will only fit together in one certain position. Because of this it is only necessary to follow the wiring diagram

of the set being made to assure connections will be correct.

Variable Condensers

Small reduction drives which fit on the condenser spindle are quite often used, and these appear to offer a problem as regards mounting. The simplest method is to use a component-mounting bracket to which the condenser (D) is fitted. A long bolt can then be used to steady the projecting lug of the drive, which must not be allowed to rotate. The whole can be mounted so the knob is conveniently situated on the panel.

If the condenser is mounted directly on the panel, a suitable hole must be drilled (this will usually need to be $\frac{3}{8}$ in. in diameter). The bush is passed through and the nut screwed on, holding the part, as shown

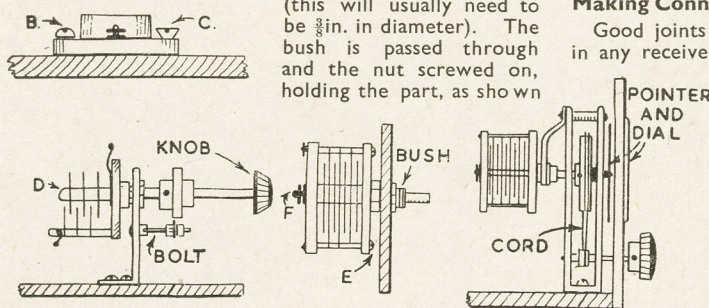


Fig. 2—Side view of panel mounting parts

at (F), Fig. 2. With a metal panel a small space (E) must exist between the bolts or rivets holding the fixed plates and the panel or the condenser will be shorted. A washer may be added on the inside to accomplish this, which is also desirable with wooden panels to assure the condenser is not distorted by pressure on these points.

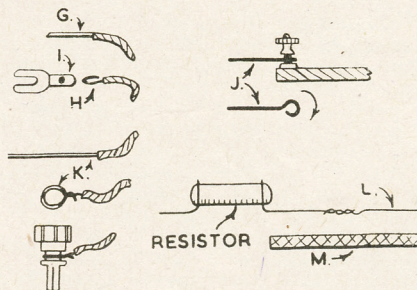


Fig. 3—Making proper connections

If the bush of the condenser is not wired directly to earth (as it should be, if possible) a wooden panel must be used, or an insulated bush added to prevent contact between axle and metal panel. A condenser in series with the aerial will require treatment in this way, as will that used with some reaction circuits where the moving plates are connected to the reaction coil.

Reduction Dials

Numerous types of reduction dials are available, and some fit directly on the

front of the panel, replacing a knob, so the condenser is fixed as already mentioned.

Others go behind the panel, and a hole of suitable shape will need to be sawn out to accommodate the dial. These drives often have a bracket to hold the condenser, as shown in Fig. 2. It is only necessary to set the dial pointer at zero, open the condenser vanes fully, then tighten the screw securing the condenser spindle.

The drive may be obtained by cord or spring plates and, although a spot of oil at other points is helpful, these should be kept dry.

Making Connections

Good joints throughout are essential in any receiver. To fix spade-ends for accumulator connections, bare about $\frac{1}{2}$ in. of flex, as shown at (G) in Fig. 3. Then twist tightly and double back, insert in the spade, and tighten up the small screw (I). The doubled end (H) should be held firmly, or crackles, etc., may arise.

Some battery plugs are treated in the same way. Others require an inch or so of flex to be bared, and the strands formed into a loop, as shown at (K). Again, other plugs have a slot through which the wire is passed, or a small hole, and whatever method is used assure the wire is perfectly tight.

Many small parts have terminals and a small loop should be made in the connecting wire. Electrician's pliers are

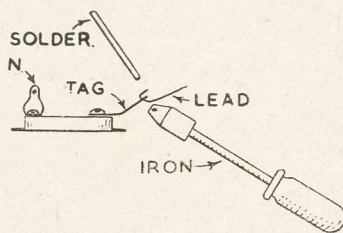


Fig. 4—Soldered joints

very convenient for all work of this nature. If the loop is made in the same direction as the terminal screws down it will not be forced open when tightening up, as often happens when the loop is reversed (see (J)).

Many resistors and wire-ended condensers have quite short leads. If these will not reach, a length of thin wire should be twisted on (L) in Fig. 3, the joint soldered, and insulated sleeving (M) slipped over.

Tinned-copper wire is much the best, because it solders very easily and also

(Continued foot of page 216)

The housewife will be delighted if you arrange these handy KITCHEN FITMENTS

FEW houses of any type seldom have sufficient cupboard space to satisfy the housewife and yet the space is actually there to be used. It is just the question of making something out of the ordinary to fit into that space. It is also a fact that in many cases the goods which go in any set space can easily go into half of the height or depth by careful arrangement. Here are some suggestions.

Corner Space

What about those corners? Have a glance at the space in the corner, shown in Fig. 1. Obviously an ideal piece of cupboard room to make. In that detail

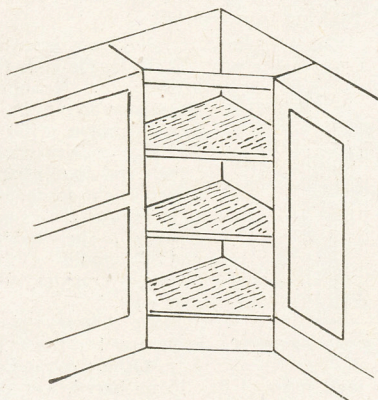


Fig. 1—A corner converted to shelving

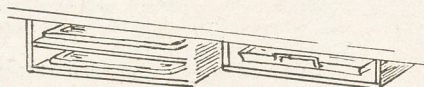


Fig. 6—Some under-shelf tin-holders

this has been converted into a small angular cupboard, but nevertheless, it is very useful.

Should the two cupboards or other fittings which form this space be highly polished affairs one need not damage them. Just build a light wooden frame, as seen in Fig. 2, from light 1in. square wood prepared and stained before assembly. Now these two stands will fit in and the two outside cupboards and the wall corner will hold the whole lot firm.

Panels or hardboard is now off permit

and plentiful. This is very tough and just the thing for doors and shelves. It is mostly 6ft. by 3ft., and sometimes larger, which enables you to get large cupboard doors out in one piece. One side is very effective and when polished or stained makes a very clean, slick finish. It does look very modern in trend but needs a good 1½in. square framework to support it.

Making Cupboard Space

A space so often left absolutely unused is the space under the sink. A fitment there must be carefully considered, as no obstruction must be made in view of the position of the waste pipe.

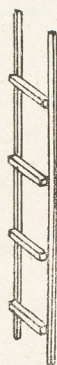


Fig. 2—Shelf framework

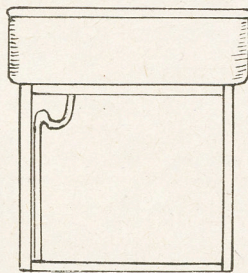


Fig. 3—The usual under-sink vacancy

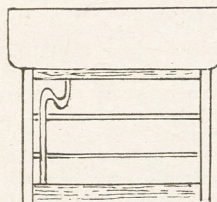


Fig. 4—Shelf filling

However, generally speaking it can be used. Apart from its storage purpose, too, it does make the sink look a little more attractive.

As shown in sketch Fig. 3, the sides are fitted to two uprights made of 1½in. square material with a cross section of wood on the floor. Another piece crosses at the top. Try using screws in preference to nails so the sink does not get disturbed or chipped in any way. Note that the base is built up from the floor because there may be a certain amount of dampness on the floor under

the sink. Floor and shelves should be made to take out (see Fig. 4). A flat type of door, hinged, can be added. This type of storage will take stains, polishes and small cleaning items.

Crockery Holder

There is seldom room for all the crockery. If you find a suitable space then proceed to work out how many shelves you need. Build the shelves to suit the goods in this way. Bottles and jars can go at the top. They are not always in use. See how tall these are. Make the top shelf to just take them. Jugs are mostly next in use. Probably you have three sizes. Here again you

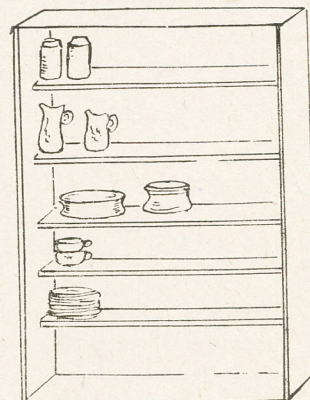


Fig. 5—Shelving for crockery

can save space. Half-inch clearance is quite enough. Some useful shelving is shown in Fig. 5.

Soup tureens could come next. These are heavy and best housed mid-way, not too high and not too low. In any case they are not used so much as cups, plates and saucers. Cups can stand in each other and thus save space again. If you keep the shelves for the large plates close to each other you will prevent too much weight being put on any one shelf.

Even trays, bread boards, etc., can be housed right out of the way by being given slots fitted under any shelf where there is space, as can be seen in Fig. 6, and arranged according to your own needs and opportunities.

Remember to make all joints strong to take the weight of the heavy contents.

Radio Construction—(Continued from page 215)

makes good terminal joints, whereas copper wire oxidizes rapidly and is difficult to solder in this state. Thick wire is awkward. Wire of about 20 S.W.G. is amply stout for all ordinary receivers and easy to handle.

If the wire is insulated the insulation should be stripped off at the ends, taking care not to fracture the wire itself. In small sets much time can be saved by using bare wire, and insulated sleeving can be slipped over this where desired. For all battery leads flex is used.

Though many constructors avoid soldering, this can be much easier and quicker than forming terminal connections, and with some components soldering is essential as only tags or leads are fitted.

Actually, soldering is easy if the iron is really hot—it should melt the solder immediately the latter is touched on the iron. The points to be soldered should also be clean, and for radio construction one of the well-known cored solders is best. With such solders, it is only

necessary to bring iron and solder simultaneously into contact with the joint, when the solder should run round the latter.

Iron and solder should be removed at once so as not to overheat the component internally. This is shown in Fig. 4, and often the tags have a hole (N), through which leads may be passed before soldering. Do not place solder on the hot iron and transfer this to the joint, or the fluxitive qualities of the cored solder will be wasted.

A novel piece of simple engineering is to make A TIN CAN TURBINE

DESPITE its simplicity, the little model here described will yield hours of instructive amusement to the budding engineer, and being the forerunner of the modern turbine, may well form a starting point for more ambitious efforts. If carefully made and finished, it would also form an ideal present for any mechanically-minded youngster.

The only materials required are three empty tin cans, a nail and a small square of wood, while the tools needed are a hammer, pliers, soldering-iron and tin snips or a pair of old scissors.

The Boiler

One of the tins forms the boiler, and this must be strong, watertight and provided with a well-fitting flanged lid. An empty Golden Syrup or Nescafe tin are ideal. A fairly large tinned fruit or jam container, opened up and flattened, provides material for the rest of the model. A blacking tin with a hole punched upwards in the lid and supplied with a short wick of thick string makes a suitable spirit lamp. As the edges of all the cut tin will be sharp and tend to curl, they should, before shaping, be ironed out smooth and flat with the hammer.

Begin by drawing a paper disc which

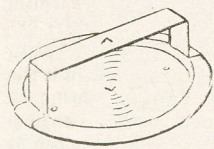


Fig. 1—Boiler lid and top bearing

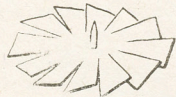


Fig. 2—Rotor on spindle

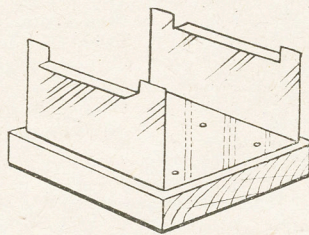


Fig. 3—Firebox fixed to base

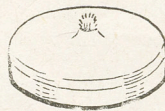


Fig. 4—The lamp

will fit snugly down into the boiler lid. Before cutting out draw a line across the diameter and make a dot at each end $\frac{1}{4}$ in. inside the circle. These dots mark the positions of the two steam ports, and the compass point indicates where the dent should be made for the bottom bearing.

Dents and Holes

Remember that only a dent must be punched here for if the lid is actually pierced, the bearing will be useless. Practice first on a spare piece of tin, a blunt nail requiring only a very light hammer-tap to produce a satisfactory dent.

After this, with the aid of a gramophone needle held in sharp-nosed pliers, pierce the two small holes for the ports. Once again light taps only are needed,

for if these holes are made too large, the requisite steam pressure will not be obtained. The ports should appear as mere pin points when the lid is held to the light. The detail at Fig. 1 shows this upper component.

Spindle

For the rotor spindle select a fairly stout 1 in. nail. Cut off its head and with a triangular file carefully work up each end to as sharp a point as possible. Make the top bearing by cutting a tin strip $\frac{1}{2}$ in. wide and long enough to span the lid. Each end should be bent down at a right-angle, and be either clipped round or soldered to the edge of the lid.

A small upwards dent must be punched in the middle of this cross piece for the top spindle point, and this part so positioned when fixed that both dents are vertically in line to ensure the spindle standing quite upright. The spindle should, of course, be free to revolve but without any appreciable shake, any adjustment needed being made by gently bending the cross piece either up or down.

The Rotor

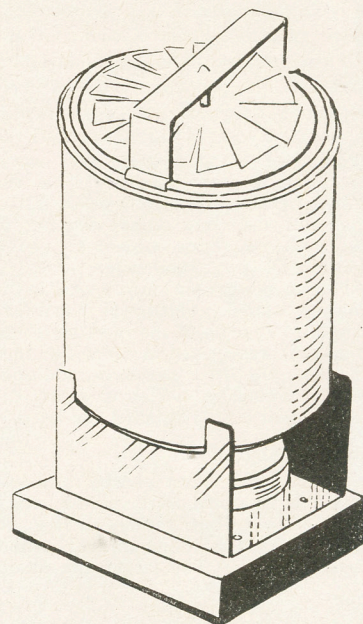
The rotor can now be made (Fig. 2) and as it will spin between the top bearing uprights, its diameter must be slightly less than the distance between them. Draw a circle of the required diameter, and an inner circle of half that size from the same compass point.

With a protractor or setsquare, divide the circle into 12 equal segments of

30 degrees, then gum the paper on to a flat piece of tin.

When dry, cut out the blank disc and punch a tight-fitting spindle hole through the centre. Now cut radially along the twelve pencilled lines as far as the inner circle to form the rotor blades. During this operation it will be found that the blades are being automatically twisted to a certain extent, and afterwards they require further twisting to an angle approximating 45 degrees with the sharp-nosed pliers.

The paper pattern can now be soaked off and the rotor pushed on to its spindle. Holding it lightly between finger and thumb, spin the assembly by gently blowing against the blades to test for truth. When correct secure the disc to the spindle with a touch of solder. Now carefully introduce the



complete rotor into its bearings and test that it spins quite freely.

The only remaining part is the firebox (Fig. 3), and this is made from a piece of tin slightly wider than the boiler and long enough to bend up into a flat channel with sides about $1\frac{1}{2}$ ins. high. Stand the boiler on these upturned sides and make $\frac{1}{4}$ in. downward cuts at the four points crossed by its circular base.

Wooden Base

Afterwards bend out the middle portions of each side so the boiler can finally bed down between the four remaining corner lugs. Tacking the fire-box floor to a slightly larger wooden base completes construction, and the turbine can now be tested. The lamp is the tin with a wick, as seen in Fig. 4.

Half fill the boiler with water and the lamp with methylated spirit, and light up. In a few minutes steam should be hissing through the ports and the little rotor buzzing merrily round. Having passed its running tests, the model should be emptied, dried off and cleaned ready to be enamelled. A black fire-box and rotor with a green boiler and top bearing will make the model really smart and attractive.

JUNIOR ENGINEERS

THOSE interested in amateur metal work will be glad to know about the *Juneero Annual* just published. It is a helpful little book and contains a design for a *Bulldozer* model to make, and particulars of a national competition with £150 in prizes. Readers interested should write to *Juneero Ltd.*, Stirling Corner, Boreham Wood, Herts., sending 1/2 for a copy.

The concluding article of helpful hints on building MODEL GALLEONS

In our previous article (December 7th), we gave a number of hints for the model maker who is undertaking these model galleons, and has proceeded to the completion of the hull. It is, perhaps, essential again to stress the importance of patience in this work. There is a great fascination in the building of these historic models, but at the same time one cannot attempt to hurry the work or expect to get it finished in a comparatively few hours.

Much depends on what you want in the finished model. Many of them are simplified replicas of the old-time ships, and easily recognised as such, but they contain very little detail or additions such as would be needed to satisfy the real student of ship building and history.

Easy for Beginners

The beginner is not advised to undertake the very elaborate models which can be built, but rather to try his 'prentice hand at a comparatively simple piece of work. The larger the model

it will mean a considerable amount of research in various books on the subject, in order to become acquainted with the type, style and position of the various parts.

Remember, too, in this connection that the ships themselves altered through the years. Even in what are generally termed galleons, there is a range of difference owing to the century covered by this period.

Historical Accuracy

On this point, as an example, deadeyes are generally used rounded with a hole through the centre, and a groove round the edge. The accurate model maker would find this incorrect because in the 15th century these deadeyes were heart shaped, scored at the upper end for the lanyard. By the 16th century, however, although their shape was retained the same, three holes were incorporated in them for lashing, and they were secured to the hull by chains.

It may be, too, that you can only obtain these deadeyes for your model in a certain size. Make sure, then, that they are in the proper proportion to the rest of the model. If you have large ones, they will look very clumsy on a small hull, and vice versa. Even the diameter of the

and need only add a note about how essential it is to fix the hull tight whilst this painting is being operated.

It is worth building a rough jig or cradle on the bench into which the hull can be fitted. It is held upside down whilst the main part is being covered, and then when that is dry, the part is reversed so the deck can receive attention. These decks in most cases should be left in a natural state, oak stained to give a weatherbeaten effect.

The deck planking is easily indicated by drawing on long parallel lines from bow to stern. You can scribe the lines down first with the point of a knife, and then run a hard pencil line into them. Have the width of the deck planking in some relation to the actual width of the model.

Deck Lining

Most beginners make these lines too wide apart, so that in reality the deck planking would be absurdly wide. On reasonably small hulls they could be about $\frac{1}{16}$ in. or $\frac{1}{8}$ in. apart. A good plan is to pencil on some of the planking first, to see how it looks, then you can alter its actual width when finally adding it to the deck itself. The inside of the bulwarks can be painted a dark brown or red, and any doors or gratings given their necessary lining in indian ink.

If you want to get a dull effect after bright paints have been used, give the whole thing a coat of eggshell varnish. This will take the gloss off entirely, but should not be used over gold paint itself. For general use, poster paint is the best, although it does tend to bring up the grain. You may prefer enamel thinned down slightly, but cellulose is not entirely satisfactory. It dries very

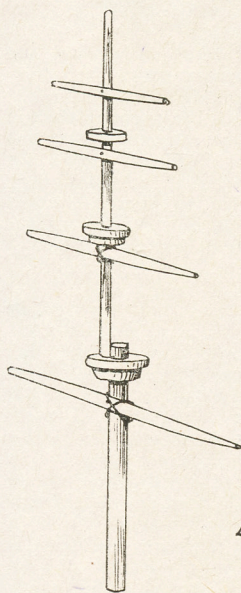


Fig. 1—Mast and spars

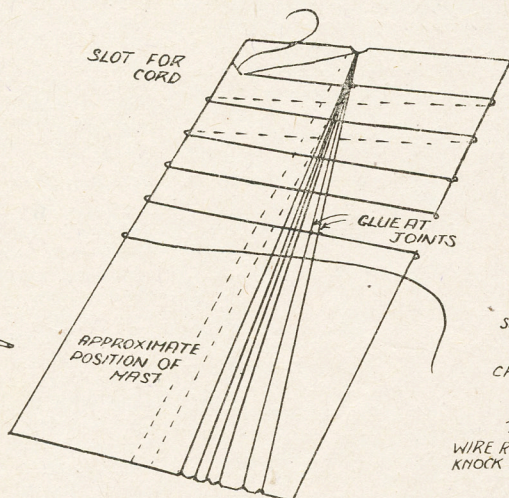


Fig. 2—How to make the shrouds

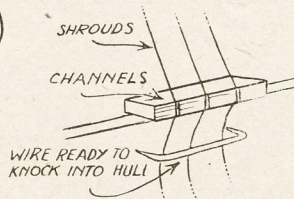


Fig. 3—Channel details

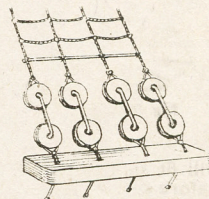


Fig. 4—Foot of shroud fixing

being made, the easier the parts are to handle. At the same time, you must remember that a large model should have many more detailed parts to it than would a smaller piece of work.

The deck of a large model, for instance, would look bare with just one or two hatches and gratings. It would have to have additional ropes, companions, sampson posts, etc. Again, the model maker must decide whether he wants everything strictly accurate according to historical records, or whether something nearly right will meet the case.

If absolute accuracy is required, then

line used for rigging should be adjusted to the actual model in hand.

Fishing line is quite suitable for this, as being strong and fine. Do not, in any case, attempt to complete your model with ordinary coarse string, particularly in various thicknesses.

Painting the Hull

Now let us return to the hull which we have completed according to the previous instructions. It should be carefully painted before the masts, sails and lines are added. We spoke of the actual painting in the previous article,

quickly, which is not always a good thing.

A fine brush must be used, and it is essential to keep the hand steady, particularly when attempting to do fine line work. Have a block of wood or something handy on which you can rest the wrist or the forearm whilst the actual fine work is being done.

The masts, sails and rigging are, of course, a complete job in themselves. When you have finished the hull, you must expect to spend just as long over the sail-work to get it satisfactory. The process involves the erection and fixing

of the masts, to which are added the spars—the cross pieces.

The sails of parchment paper are added next, and then the running lines which are those by which the sails themselves would be hauled or shortened or handled. Finally there is the standing rigging which consists of the shrouds and those lines holding the main mast and other parts rigidly to the hull itself.

Taper Masts

Each portion of the mast should taper gradually upwards, and where the sections join, a capping piece is provided to take the top of one and the bottom of the other. The tapering of the masts can be done with glasspaper, and if you fit it into a hand drill it can be revolved speedily whilst working the paper along the length of the section involved. A capping to the extreme top of the mast is added, if you desire to finish the whole thing off neatly. Be sure, however, that this little round piece of wood does not look large and clumsy.

The cross spars should taper towards each end. They can be fitted at right-angles to the mast by making a slight groove in both parts so the two bed together before gluing. A tiny pin point should be driven through both, to ensure rigidity, and a single turn of fine thread added to hold the whole thing (see Fig. 1). These tiny pins can be frequently used for joining parts, but in every case remember to bore a hole first. This can be done with a strong needle held in pliers, and twisted as it is sinking to make the hole. Glue should be used very sparingly, and no unsightly blobs left.

The Sails

The sails are cut to the patterns required, and then should be made to curve as though one were blowing them out. This 'bellying' effect is easily obtained. Lay the sail paper flat on the table, and hold a steel ruler or some similar object flat upon it. Grip one edge of the sail and pull it from underneath the edge of the ruler, with a gradual lifting movement. You can try it first with a small piece laid flat under the blade of a bread knife. By drawing the paper out smartly, the curved effect is obtained, and with the parchment or sail paper used, this curve remains with suitable realism.

Pierce tiny holes in the corners of the sails to take the running lines, and thread on the top of the sail along the spars. A spot of glue here is helpful, or you can even carry a special tab left on the sail around the spar to form a gluing piece.

Deck Fixings

Those lines which run down to the deck should be neatly finished off with a tiny eyelet. Put these into the deck close behind the bulwarks, and tie off the lines neatly. The eyelets are obtainable quite small in brass, or you may prefer to make your own little staples of bent pins or wire driven into the deck itself. For this purpose, small sharp-nosed pliers are helpful. Indeed, they are

helpful on many occasions in model making. They are, however, essential to grip the little staples and force them into the wood without bending.

Deadeyes or pulley blocks are one of the problems of the model maker, but fortunately more and more of these are now available in varying sizes. If, however, you cannot obtain them, they are not difficult to make. They do, however, require patience and care if you are having to make several dozen for your model. Do not attempt to make each one individually.

Home-made Pulley Blocks

Take a length of rod or dowelling and mark on it a series of circles each the width apart of the thickness of the proposed block. Between these pencil lines, a tiny file is used to form a groove

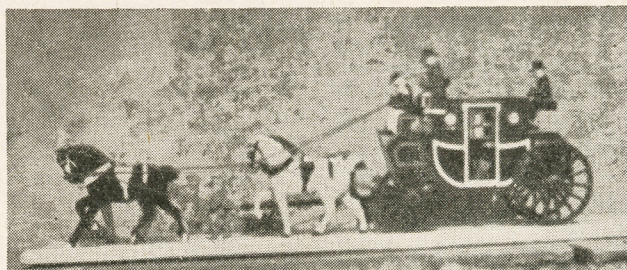
added, being quite taut and with an even tension throughout.

It is advisable at the bottom end to fit on a piece of wire to maintain the lines at their correct spacing. Add a very slight touch of glue where all cords cross, and when this has set, cut away the card and the spare parts of cord. The top end where all lines go together, must be finished off with a knot so they do not pull out. Leave also some length of line at the bottom to allow for fitting to the hull.

One method of fitting these lines to the hull is shown in the detail at Fig. 3, and the final result is shown at Fig. 4. The channels are a piece of wood glued on edge to the hull, projecting far enough to carry the shrouds outboard over the bulwarks themselves. The ends of the lines run through tiny

A First Attempt at 74!

Never too old to start! Mr. C. W. Cunningham, Elveston House, Greenway, Som., made this model of a Stage Coach from our design, at his first attempt. Not bad at 74 years of age is it? Now he is making the model of H.M.S. Bounty. Well done, sir!



round the dowel rod. If possible, drill a small hole into the dowel from the end as far as possible. Now with a very fine saw, cut the rod through at the pencil marks.

Each resulting piece is finally given a rubbing with glasspaper to round the edges. You can do this by putting the block on to a tapered stick to form a hold whilst papering. If, of course, you are going in for the heart-shaped blocks previously mentioned, then the rod will have to be triangular rather than round, and three holes bored through in position.

The blocks are principally used at the ends of the shrouds which formed the ladder leading from the bulwarks to the mast. These shrouds extend from a single width at the top to, perhaps, four or six lines at the bottom, and have cross runs (the ratlines) evenly spaced upwards. Making these, again, must be carried out with care if a satisfactory result is to be obtained. One way of doing it is shown in the detail herewith—Fig. 2.

Forming Shrouds

A piece of fairly stiff card has a cut made in it at one end, then at the other end the same number of cuts as it is proposed to have lines. The card need not be so wide as shown, which is merely for illustrating purposes. One end of the cord is fitted in a slot, and then carried round from one end to another as indicated. The cross lines are then

grooves in the channel edge, and are then pulled tight to the hull with a little wire staple as shown. This wire is bent at each end and sharpened to a point so it can be forced into the wood of the hull itself.

Where running lines are passed round the pulley blocks, they can be glued in position, and if two lines pass over each other, a spot of glue will help to fit them satisfactorily together. Take care in adding all these lines to see that the tension is maintained throughout satisfactorily.

Fixing the Masts

The masts should be let into the deck in the first place, and when their various sections are added, the whole thing should be rigid. The standing lines should then be carried to their various parts in the hull. Take care not to pull one lot tight and so loosen another lot. Keep them all just sufficiently taut to appear strong and supporting. Lines between masts or running from sails need not be so taut, and a study of the usual picture of the finished model will help in this respect.

Naturally it is impossible to get all the actual lines to these ships because of the size of the model. Those which are fitted, however, should appear to be a part of the whole thing, and neither be too obtrusive for size or quantity, nor too unseen to play their part in the finished model. All such details help to make a finer piece of work.

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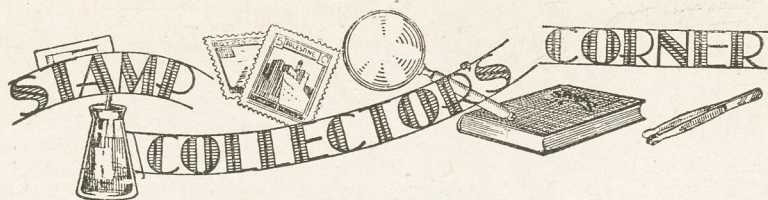
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South of The Equator

A FEW weeks ago we discussed some of the marvels which are shown on the stamps issued by countries situated north of the equator. We had to divide the world into at least two parts because there were so many marvels to show. This week we hope to tackle the subject south of the equator. Naturally things which are strange and interesting to us here in England are commonplace to those who live in the country picturing them.

Suppose we look at the first illustration. It is one of the stamps from the colony Brunei which lies in the centre of the north-west coast of the island of Borneo, between Sarawak and the State of North Borneo. Brunei is only 4,000 square miles in area, and is under the

reduced. This allows a bigger and better picture, though it is doubtful if the designs are as interesting as some of the former.

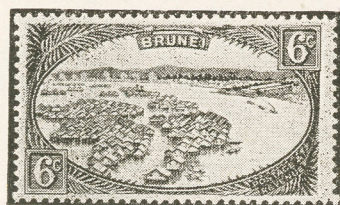
Southern America

The southern part of the American Continent bristles with interest from the Falkland Islands north until the equator is reached. The Republic of Chile shows the Desert of Atacama which the South American Handbook describes as:— 'A land of merciless sunshine devoid of vegetation; living conditions in the mining towns are most difficult, the necessities of life having to be imported.

this is over 4,500 square miles, being 138 miles long and half that width. But the remarkable thing is that the lake is no less than 12,500 feet above sea level. We may also see some of the famous volcanoes on the Peruvian stamps.

Two countries have issued maps of the River Amazon. Brazil issued one in 1943 which was quite an up-to-date map showing the chief tributaries. The other was issued by Spain in 1938, but this is a very old map and shows the River Amazon as it was at the time of Iglesias whose expedition went up the River Amazon. This is rather more interesting as a curio than as a map.

Now, crossing the Pacific to New Zealand, one of the most attractive



Lake dwellings of Brunei



Argentine Peace Statue



High above sea level



The duck-billed platypus

rule of a Native Sultan with a British Resident as adviser.

The chief town is Brunei on the river of the same name. The stamp gives an illustration of the old town which was actually built over the water of the river. The new town is now on the mainland.

This appears to us a most extraordinary kind of town, and the houses almost as curious as the tree houses which are shown on the 1½d. value of the 1932 issue from Papua. The pile dwellings remind us of what we think the houses around Glastonbury must have been in the lake village which was discovered near there.

African Views

On the African stamps there are some views which should strike us as worthy of note. We have the Victoria Falls shown on the stamps of Rhodesia—falls on the River Zambesi discovered in 1855 by David Livingstone. These falls are a mile wide and higher than the Niagara and now supply some of the electric power for the Rand industries. As most of you will have views of these falls we shall not show them now.

The Belgian Congo has some very pretty pictures, but unfortunately, they are rather small, the border round taking up so much of the space. However, after 1932 the design of the stamp was changed and now the border is

Towns bear an air of tragedy and decay—the desert conceals vast mineral wealth and promises better days'. This desert is shown on the 5c. of the 1936 set.

A Mountain Statue

Just across the Andes is the Argentine Republic, and travelling via the La Cumbre Pass one can view the statue shown on the second stamp 'Christ of the Andes'. This statue was erected to cement the friendship between the two nations as the tablet at the base states 'Sooner shall these mountains crumble into dust than the peoples of Argentina and Chile break the peace which at the feet of Christ the Redeemer they have sworn to maintain'.

The stamp was issued in 1934 in connection with the 32nd International Eucharistic Congress. Argentina and Brazil both issue stamps showing one of the waterfalls which was mentioned in these columns a little while ago, the Iguazu Falls.

A Strange Lake

Similarly two of the South American Republics, Bolivia and Peru both give illustrations of another world marvel—Lake Titicaca. The Peruvian stamp is shown here because it indicates to some extent the size of the lake by the presence of the steamer. No steamer is likely to be on a very small lake. Actually

stamps that awaits us is the 1½d. of the 1935 set showing a Maori woman dipping a bucket into a hot spring. These hot springs must be most fascinating. There is the story that it is possible to have a fishing line in one lake and then having caught a trout to turn round and hang it in boiling water to cook. By the way, the stamp just mentioned is quite a useful one; it is not valuable at present, but it has possibilities.

A Curious Animal

Our last illustration is of that curious animal the duck-billed platypus, which appears on the 9d. stamp of the 1938 issue of Australia. The young are hatched from eggs, but they are suckled by milk from the mother. They are adapted to a semi-aquatic life, having webbed feet which also have strong claws for burrowing. Their beak is like that of a duck—hence the name.

Usually two eggs are laid and they are joined side by side, being laid in a nest, made of grass and leaves, about a foot below the surface with a tunnel leading to it which may be as long as 60ft., though 24ft. is a more general length.

That should be sufficient to indicate that the southern hemisphere has its curiosities which stamps reveal and invite us to visit. Soon we hope the amount of money one can spend will be enough to enable one to see some of these sights of the stamp album.

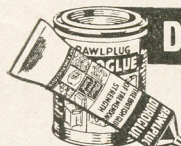
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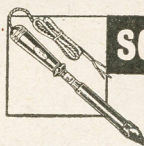


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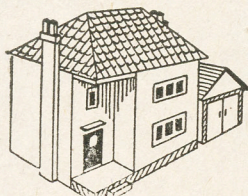
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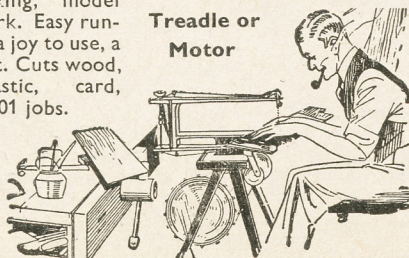
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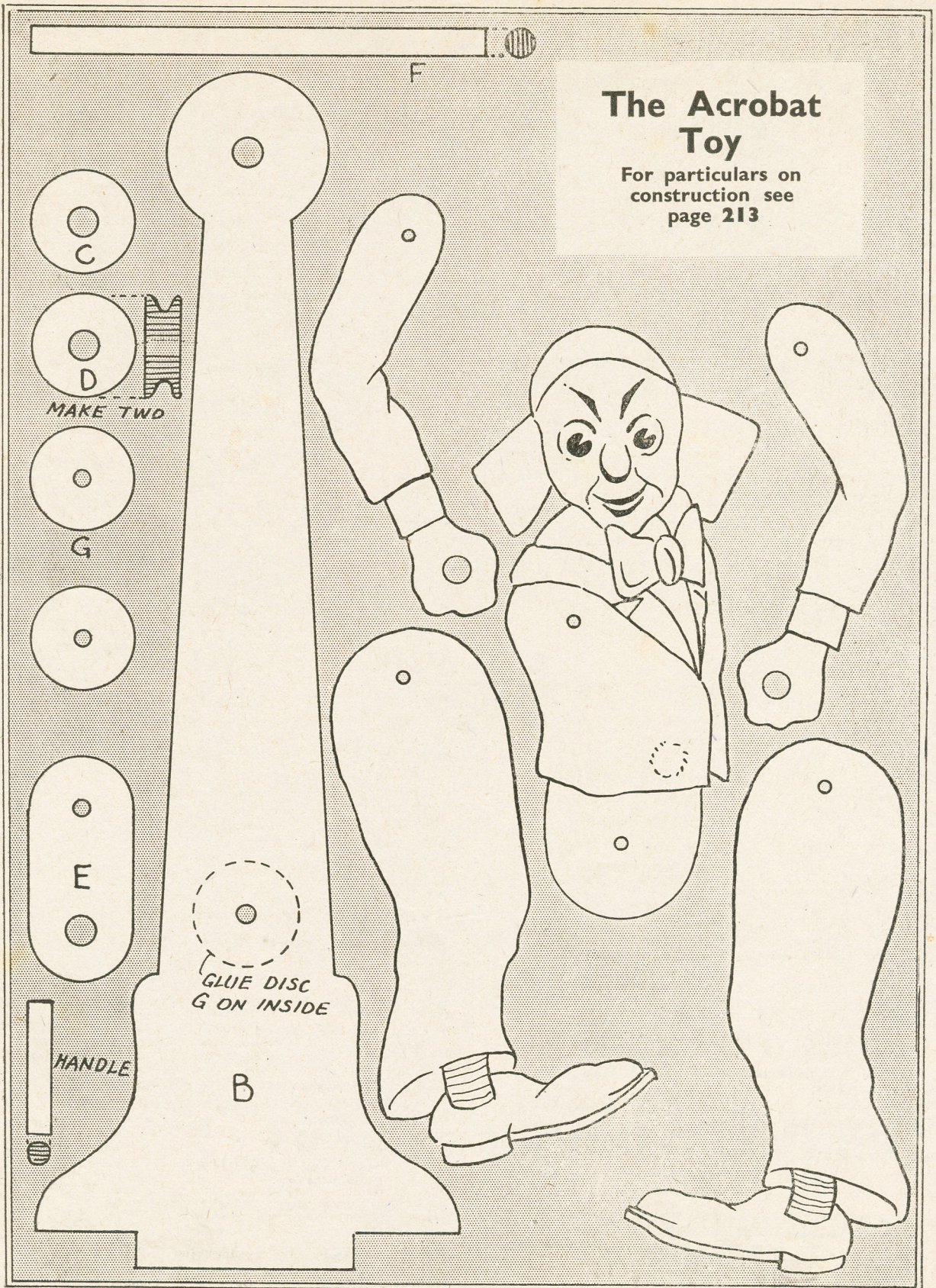
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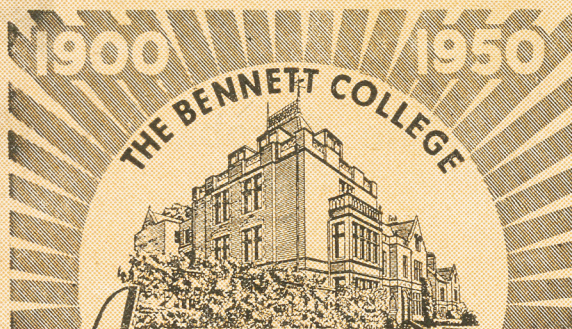
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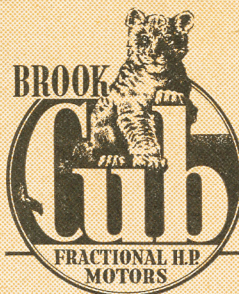
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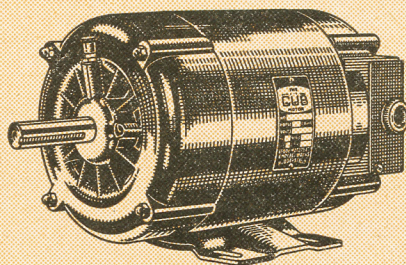
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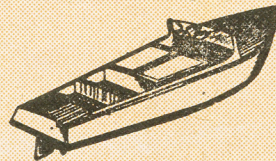
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